

WHAT IS CLAIMED IS:

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1. A method for recovering nylon from a nylon-containing material, comprising:
contacting the nylon-containing material with an alkanol-containing solvent at
elevated temperature and at a pressure higher than the equilibrium pressure of the alkanol-
containing solvent at the elevated temperature, thereby dissolving the nylon in the
alkanol-containing solvent;
removing the alkanol-containing solvent containing dissolved nylon from any
undissolved solids; and
decreasing the temperature of the alkanol-containing solvent containing dissolved
nylon to precipitate the dissolved nylon.

2. The method of claim 1, wherein the nylon-containing material comprises a floor
covering material.

3. The method of claim 1, wherein the nylon is nylon 6,6.

4. The method of claim 1, wherein the alkanol-containing solvent is substantially free
of glycols or other polyols.

5. The method of claim 1, wherein the alkanol-containing solvent comprises an
alkanol selected from the group consisting of methanol, ethanol, propanols, butanols, and
mixtures thereof.

6. The method of claim 1, wherein the alkanol-containing solvent comprises a
mixture of alkanol and water.

7. The method of claim 6, wherein the alkanol is present in an amount ranging from
about 40 wt% to about 90 wt% of the solvent.

- 1 8. The method of claim 7, wherein the alkanol-containing solvent comprises a
2 mixture of about 80 wt% ethanol in water.
- 1 9. The method of claim 1, wherein the pressure during the contacting ranges from
2 about 250 psig to about 600 psig.
- 1 10. The method of claim 1, wherein the elevated temperature ranges from about
2 130 °C to about 155 °C.
- 1 11. The method of claim 10, wherein the elevated temperature is about 145 ° C.
- 1 12. The method of claim 1, wherein the pressure higher than the equilibrium pressure
2 of the alkanol-containing solvent at the elevated temperature is attained by introducing an
3 inert gas into the reactor.
- 1 13. The method of claim 1, wherein the pressure higher than the equilibrium pressure
2 of the alkanol-containing solvent at the elevated temperature results at least in part from
3 the pressure head of the alkanol-containing solvent entering the reactor.
- 1 14. The method of claim 1, wherein the nylon-containing waste material comprises
2 nylon-containing floor covering materials.
- 1 15. The method of claim 14, wherein the nylon-containing floor covering materials
2 comprise carpet or carpet tile, or mixtures thereof.
- 1 16. The method of claim 15, wherein the carpet or carpet tile contains nylon 6,6.